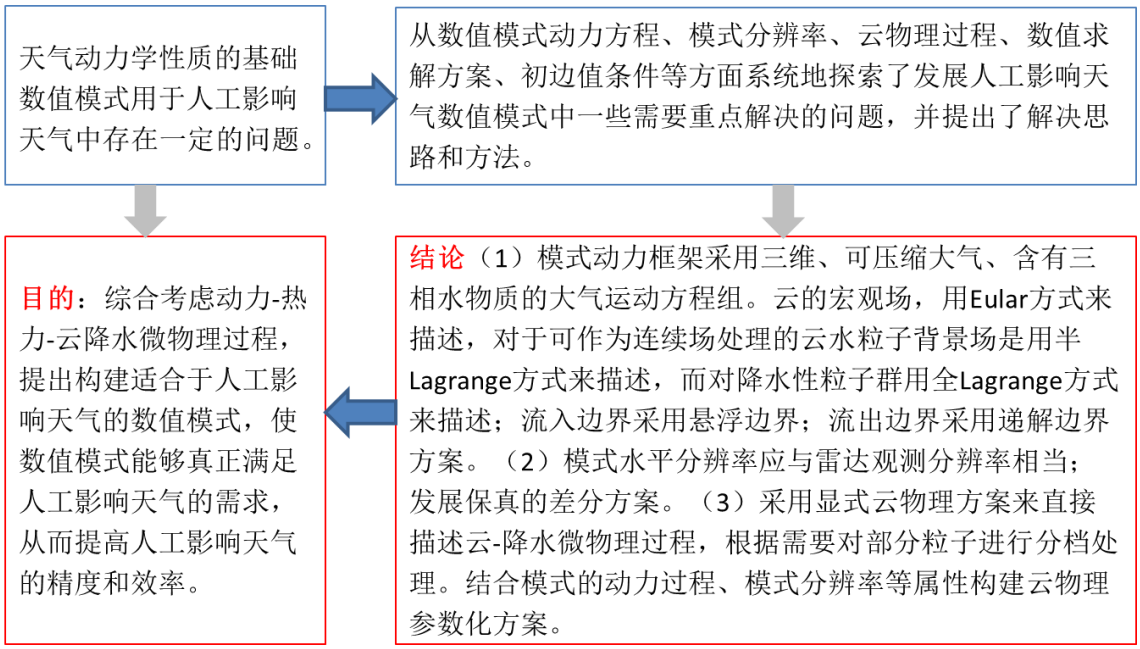
Citation: Xu, H. B., and J. F. Yin, 2017: Key issues in developing numerical models for artificial weather modification. *J. Meteor. Res.*, **31**(6), 000–000, doi: 10.1007/s13351-017-7113-3. (in press)

中文题目：关于发展人工影响天气数值模式的一些问题

作者：许焕斌*，尹金方**

人工影响天气的学科基础是中小尺度天气动力学加云降水物理学，需要把天气-动力-云降水物理耦合成一体。考虑到目前将天气动力学性质的基础数值模式用于人工影响天气中的问题，从数值模式动力方程、模式分辨率、云物理过程、数值求解方案、初边值条件等方面系统地探索了发展人工影响天气数值模式中一些需要重点解决，且不可忽视的特色问题，并举例对相关问题提出了解决思路和方法。期望提出的问题有助于构思更适合于人工影响天气数值模式，使数值模式功能真正向满足人工影响天气的要求靠近一步。

思维导图



英文题目：Some key issues of developing the numerical model for artificial weather modification

作者：Xu Huanbin*, Yin Jinfang**

英文摘要：The scientific foundation of artificial weather modification is meso- and small-scale dynamics and cloud-precipitation microphysics. Artificial weather modification requires to realistically couple weather patterns, dynamical processes, and microphysical processes together. Now that the numerical models with weather dynamical characteristics have been widely applied to artificial weather modifications, some keys points, which must not be neglected, in developing special numerical models for artificial weather modification are proposed, including dynamical equations, model resolution, cloud-precipitation microphysical processes, numerical computation method, and initial and boundary conditions. Based on several examples, approaches are offered to deal with the problems. The key points are useful for developing special numerical models for artificial weather modification. These key points, if considered in a numerical model, will make it further suitable for artificial weather modification..